Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-17 (cancelled)

18. (previously presented) A method of analyzing a clock or communication signal comprised of transitions intended to occur at ideal points in time, but which in fact occur at non-ideal points in time, the method comprising:

receiving the signal;

timing a plurality of the transitions within the received signal;

constructing a histogram based upon the plurality of timed transitions; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

19. (previously presented) The method of claim 18, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual timing of the transitions;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

20. (previously presented) The method of claim 19, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

21. (previously presented) The method of claim 19, wherein the model parameters comprise mean (μ) and standard deviation (σ).

22. (previously presented) The method of claim 21, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

23. (previously presented) The method of claim 21, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

24-35. (cancelled)

36. (previously presented) An apparatus for analyzing a clock or communication signal comprised of transitions intended to occur at ideal points in time, but which in fact occur at non-ideal points in time, the apparatus comprising:

a measurement apparatus for timing a plurality of the transitions within the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of timed transitions; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

37. (previously presented) The apparatus of claim 36, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram representing actual timing of the transitions;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

38. (previously presented) The apparatus of claim 37, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

39. (previously presented) The apparatus of claim 37, wherein the model parameters comprise mean (μ) and standard deviation (σ).

40. (previously presented) The apparatus of claim 39, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

41. (previously presented) The apparatus of claim 39, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

42-53. (cancelled)

54. (previously presented) A method of analyzing a clock or communication signal comprised of signals components intended to have an ideal amplitude, but which in fact have a non-ideal amplitude, the method comprising:

receiving the signal;

measuring the actual amplitude of the signal components of the received signal;

constructing a histogram based upon the plurality of measured amplitudes; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random noise components of the signal.

55. (previously presented) The method of claim 54, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual amplitudes of the signal components;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

56. (previously presented) The method of claim 55, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

57. (previously presented) The method of claim 55, wherein the model parameters comprise mean (μ) and standard deviation (σ).

58. (previously presented) The method of claim 57, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

59. (previously presented) The method of claim 57, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

60-71. (cancelled)

72. (previously presented) An apparatus for analyzing a clock or communication signal comprised of signals components intended to have an ideal amplitude, but which in fact have a non-ideal amplitude, the apparatus comprising:

a measurement apparatus for measuring the actual amplitude of the signal components of the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of measured amplitudes; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random noise components of the signal.

73. (previously presented) The apparatus of claim 72, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

74. (previously presented) The apparatus of claim 73, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

75. (previously presented) The apparatus of claim 73, wherein the model parameters comprise mean (μ) and standard deviation (σ).

76. (previously presented) The apparatus of claim 75, wherein the deterministic component is calculated according the following formula: $\mu1 - \mu2$, $\mu1$ representing the mean of the first model distribution, and $\mu2$ representing the mean of the second model distribution.

77. (previously presented) The apparatus of claim 75, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

78-89. (cancelled)

90. (previously presented) A method of analyzing a clock or communication signal comprised of waveforms intended to have an ideal phase, but which in fact have a non-ideal phase, the method comprising:

receiving the signal;

measuring the actual phase of the waveforms of the received signal;

constructing a histogram based upon the measured phases; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random phase jitter components of the signal.

91. (previously presented) The method of claim 90, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual phases of the waveforms;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

92. (previously presented) The method of claim 91, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

93. (previously presented) The method of claim 91, wherein the model parameters comprise mean (μ) and standard deviation (σ).

94. (previously presented) The method of claim 93, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

95. (previously presented) The method of claim 93, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation

of the first model distribution, and σ2 representing the standard deviation of the second model distribution.

96-101. (cancelled)

102. (previously presented) An apparatus for analyzing a clock or communication signal comprised of waveforms intended to have an ideal phase, but which in fact have a non-ideal phase, the apparatus comprising:

a measurement apparatus for measuring the actual phase of the waveforms of the received signal; and

an analyzing unit for

constructing a histogram based upon the measured phases; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random phase jitter components of the signal.

103. (previously presented) The apparatus of claim 102, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

104. (previously presented) The apparatus of claim 103, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

105. (previously presented) The apparatus of claim 103, wherein the model parameters comprise mean (μ) and standard deviation (σ).

106. (previously presented) The apparatus of claim 105, wherein the deterministic component is calculated according the following formula: $\mu1 - \mu2$, $\mu1$ representing the mean of the first model distribution, and $\mu2$ representing the mean of the second model distribution.

107. (previously presented) The apparatus of claim 105, wherein the random component is calculated according the following formula $(\sigma1 + \sigma2)/2$, $\sigma1$ representing the standard deviation of the first model distribution, and $\sigma2$ representing the standard deviation of the second model distribution.

108-113. (cancelled)

114. (previously presented) A method of analyzing a clock signal intended to have a particular period, but which in fact has an irregular period, the method comprising:

receiving the signal;

timing a plurality of periods within the received signal;

constructing a histogram based upon the plurality of timed periods; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

115. (previously presented) The method of claim 114, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual periods within the clock signal;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

116. (previously presented) The method of claim 115, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

117. (previously presented) The method of claim 115, wherein the model parameters comprise mean (μ) and standard deviation (σ).

118. (previously presented) The method of claim 117, wherein the deterministic component is calculated according the following formula: $\mu1 - \mu2$, $\mu1$ representing the mean of the first model distribution, and $\mu2$ representing the mean of the second model distribution.

119. (previously presented) The method of claim 117, wherein the random component is calculated according the following formula $(\sigma1 + \sigma2)/2$, $\sigma1$ representing the standard deviation of the first model distribution, and $\sigma2$ representing the standard deviation of the second model distribution.

120-125. (cancelled)

126. (previously presented) An apparatus for analyzing a clock signal intended to have a particular period, but which in fact has an irregular period, the apparatus comprising:

a measurement apparatus for timing a plurality of periods within the received signal; and an analyzing unit for

constructing a histogram based upon the plurality of timed periods; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

127. (previously presented) The apparatus of claim 126, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

128. (previously presented) The apparatus of claim 127, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

129. (previously presented) The apparatus of claim 127, wherein the model parameters comprise mean (μ) and standard deviation (σ).

130. (previously presented) The apparatus of claim 129, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

131. (previously presented) The apparatus of claim 129, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

132-137. (cancelled)

138. (previously presented) A method of analyzing a clock signal intended to have a particular frequency, but which in fact has an irregular frequency, the method comprising:

receiving the signal;

taking a plurality of frequency measurements of the received signal;

constructing a histogram based upon the plurality of frequency measurements; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

139. (previously presented) The method of claim 138, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual frequencies within the clock signal;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

140. (previously presented) The method of claim 139, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

141. (previously presented) The method of claim 139, wherein the model parameters comprise mean (μ) and standard deviation (σ).

142. (previously presented) The method of claim 141, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

143. (previously presented) The method of claim 141, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

144-149. (cancelled)

150. (previously presented) An apparatus for analyzing a clock signal intended to have a particular frequency, but which in fact has an irregular frequency, the apparatus comprising:

a measurement apparatus for taking a plurality of frequency measurements of the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of frequency measurements;

and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

151. (previously presented) The apparatus of claim 150, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

152. (previously presented) The apparatus of claim 151, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

153. (previously presented) The apparatus of claim 151, wherein the model parameters comprise mean (μ) and standard deviation (σ).

154. (previously presented) The apparatus of claim 153, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

155. (previously presented) The apparatus of claim 153, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

156-161. (cancelled)

162. (previously presented) A method of analyzing a clock or communication signal comprised of waveforms intended to have a particular rise or fall time, but which in fact have a non-ideal rise or fall time, the method comprising:

receiving the signal;

timing a plurality of rise or fall times within the received signal;

constructing a histogram based upon the plurality of timed rise or fall times; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

163. (previously presented) The method of claim 162, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual rise or fall times of the waveforms;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

164. (previously presented) The method of claim 163, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

165. (previously presented) The method of claim 163, wherein the model parameters comprise mean (μ) and standard deviation (σ).

166. (previously presented) The method of claim 165, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

167. (previously presented) The method of claim 165, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation

of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

168-173. (cancelled)

174. (previously presented) An apparatus for analyzing a clock or communication signal comprised of waveforms intended to have a particular rise or fall time, but which in fact have a non-ideal rise or fall time, the apparatus comprising:

a measurement apparatus for timing a plurality of rise or fall times within the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of timed rise or fall times; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

175. (previously presented) The apparatus of claim 174, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

176. (previously presented) The apparatus of claim 175, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

177. (previously presented) The apparatus of claim 175, wherein the model parameters comprise mean (μ) and standard deviation (σ).

178. (previously presented) The apparatus of claim 177, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

179. (previously presented) The apparatus of claim 177, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

180-185. (cancelled)

186. (previously presented) A method for analyzing a clock or communication signal comprised of at least one signal feature intended to exhibit an ideal characteristic, but which in fact exhibits a non-ideal characteristic, the method comprising:

receving the signal;

measuring a plurality of signal features within the received signal;

constructing a histogram based upon the plurality of measured features;

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

187. (previously presented) An apparatus for analyzing a clock or communication signal comprised of at least one signal feature intended to exhibit an ideal characteristic, but which in fact exhibits a non-ideal characteristic, the apparatus comprising:

a measurement apparatus for timing a plurality of rise or fall times within the received signal; and

an analyzing unit for executing the method of claim 186.